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ABSTRACT

The final report on the development of a Work-Relevant Attitudes Inventory (WRAI) describes the use of the WRAI in diagnosing the needs of individuals and evaluating the effectiveness of manpower programs. The WRAI was used in two longitudinal studies: four Neighborhood Youth Corps (NYC) programs with 502 subjects, and a demostration education project, the New Educational Program, with 526 subjects. The WRAI was able to differentiate between subjects making a "good" and a "poor" adjustment to work. Furthermore, positive changes in WRAI scores were associated with a "good" adjustment. The WRAI also correlated with counselor ratings and with achievement test scores in reading and mathematics. It was concluded that the WRAI had demonstrated its usefulness as a measure of program effectiveness and as a help in diagnosing the needs of new program participants. Five appendixes include the WRAI and various statistical measures relating to the results of its administration. (Author/JR)

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THE MEASUREMENT OF WORK-RELEVANT ATTITUDES

by

Regis H. Walther

June, 1975

Final Report

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16. Abstracts This is the final report of the development of a Work-Relevant Attitudes Inventory (WRAI) for use in diagnosing the needs of individuals and evaluating the effectiveness of manpower programs. The WRAI was used in two longitudinal studies: four NYC programs with 502 subjects and a demonstration education project with 526 subjects. The WRAI was able to differentiate between subjects making a "good" and a "poor" adjustment to work. Furthermore, positive changes in WRAI scores were associated with a "good" adjustment. The WRAI also correlated with counselor ratings and with achievement test scores in reading and mathematics. It was concluded that the WRAI had demonstrated its usefulness as a measure of program effectiveness and as a help in diagnosing the needs of new program participants.

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SUMMARY

The research reported here is the final phase of a long term effort to develop a Work-Relevant Attitudes Inventory (WRAI) for use in diagnosing the needs of individuals and evaluating the effectiveness of manpower programs. In early studies items were identified which differentiated between criterion groups. From the initial 72 items, 26 were selected for use in the current studies, and arranged into three scales, Optimism, Self-confidence, and Unsocialized Attitudes.

The WRAI was then used in two longitudinal studies: (a) a study of out-of-school Neighborhood Youth Corps (NYC) programs in four cities involving 502 subjects and in which the WRAI was administered three times, and (b) a study of the second demonstration of a New Educational Program (NEP-2) in five manpower programs involving 526 subjects.

Results indicated that the WRAI was able to differentiate between subjects making a "good" and a "poor" adjustment to work and that the change in WRAI scores while participating in the NYC program was in a positive direction for subjects making a "good" adjustment to work, and negative for subjects making a "poor" adjustment. WRAI scores were also found to be associated with the counselor's rating of the subject's interest in an educational program, of the usefulness of the program, and with achievement test scores in reading and mathematics.

Test-retest correlations with the two administrations over a year apart were in the .60's for total WRAI scores. Since there was measurable change in scores between the two administrations, it can be expected that the correlations would have been substantially higher if the time span between administrations had been shorter.

It was concluded that the WRAI had demonstrated its potential use as a measure of program effectiveness and as a help in diagnosing the needs of new program participants.

THE MEASUREMENT OF WORK-RELEVANT ATTITUDES

Background

This paper reports the final phases in the development of a Work-Relevant Attitudes Inventory (WRAI). Early developmental work was reported to the Manpower Administration in October, 1970.[1]

The work on the development of the inventory began, after a review of the research literature, with the selection of a pool of 72 items. These items were administered to 89 out-of-school Neighborhood Youth Corps (NYC) enrollees in Cincinnati and to 78 New Career enrollees in Durham. Performance ratings were obtained from counselors for each subject. A factor analysis of the 72 items produced three interpretable factors: Optimism, Self-confidence and Unsocialized attitudes. The working hypotheses as to the meaning of the three factors were:

1. Optimism--The degree to which the individual assumes that the intentions of other people are benevolent and that satisfactions can be expected in the natural course of events.
2. Self-confidence--The degree to which the individual believes that he can by his own actions influence future events.
3. Unsocialized attitudes--The degree to which the individual fails to accept the requirements of social living.

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[1]Regis H. Walther, The Measurement of Work-Relevant Attitudes (Springfield, Virginia: National Technical Information Service, 1970, NTIS #PB195986).

The items were then grouped into three scales designed to measure these variables. An item was included in a scale if its content appeared to be related to the hypothesis for the scale, if it loaded significantly on the relevant factor, and if it differentiated between criteria groups.

A revised inventory of 34 items was prepared for use in further developmental work. Items were added or rewritten to improve their quality, and ineffective items were eliminated. The revised inventory was administered to three out-of-school groups (NYC, New Careers, and delinquents) and four in-school groups (NYC in-school enrollees, and students in an urban high school, an inner city high school, and a vocational urban high school). The inventory differentiated on the basis of sex, race, and school status with the largest proportion of the variance associated with school status. A factor analysis of the items supported the previous conclusion that Optimism, Self-confidence, and Unsocialized Attitudes were three important underlying dimensions.

Ten items from the inventory were included in an interview schedule administered to 306 black male high school dropouts interviewed approximately two and one-half years after dropping out of school. A composite score developed from the items was found to differentiate in the expected direction between subjects making a "good" and a "poor" adjustment to work.

The full 34-item inventory was then used in a longitudinal study of NYC and New Career enrollees, with the inventory being administered at the time of enrollment and performance ratings being secured six months to a year after enrollment. The results were ambiguous. In general, differences in the predicted direction were found for females but not for males.

The inventory was then revised a second time on the basis of the analysis of the items and reduced to 26 items

for use in the studies being reported in this paper.

Purpose

The purpose of the research reported in this paper was to examine further the validity of the WRAI: to analyze more data in order to see whether the WRAI was associated, as expected, with independent measures of performance.

The value of the WRAI as a tool for program administrators hinged on the results of this validation research. If the results indicated WRAI validity, this short, self-report instrument could provide the administrators of training programs with a useful, easy-to-use method that would be helpful in

1. Diagnosing some of the needs of new participants
2. Planning participation; and
3. Evaluating or estimating program effect.

Study Design

The effectiveness of the Work-Relevant Attitude Inventory in predicting criteria of program effectiveness was researched in two independent studies. The first was a longitudinal study of out-of-school Neighborhood Youth Corps enrollees in four cities; and the second was a longitudinal study of students in an experimental education program in five sites. The research design of both studies included the WRAI.

In the NYC study, a study group of approximately 125 in each site (Atlanta, Baltimore, Cincinnati, and St. Louis) was constituted in 1970 by including every new enrollee after a selected date until the desired number was reached. The composite group totaled 502 subjects. The WRAI was administered in its entirety at the time the subjects enrolled in the program and as part of the 1st follow-up interview conducted several months after they had terminated. A shortened version, composed of 13 items, was administered as part of the 2nd follow-up interview a little over a year later. Subjects participated in the NYC program an average of about ten months, and the time

span between time of entering the program and time of 2nd follow-up interview was over two and a half years. Useful responses to the WRAI were obtained from 498 subjects at time of intake, from 306 subjects at time of 1st follow-up interview[1], and from 353 subjects at the time of the 2nd follow-up interview.

The second study used an abbreviated 12-item form of the WRAI as part of the intake interview for five programs participating in a second New Education Program (NEP-2) demonstration project which involved adolescent and adult academic underachievers.[2] These students were located in five sites, as follows:

1. A maximum and a minimum security youth correctional institution in Contra Costa County, California. The total number of subjects at the two facilities was 196.
2. The MDTA Skills Center in Pacoima, California, 94 subjects.
3. An out-of-school NYC program in Long Beach, Calif., 92 subjects.
4. An out-of-school NYC program in Spokane, Wash., 95 subjects.
5. A dropout-prone class in Aviation High School, Redondo Beach, Calif., 49 subjects.

The total number of NEP-2 subjects was 526. The study lasted approximatley a year and ratings on attributes of the subject's interest and progress in the program were

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[1]St. Louis subjects had to be eliminated from the sample due to faulty administration by the interviewer. This study is reported in Regis H. Walther and Margaret L. Magnusson, A Longitudinal Study of Selected Out-of-School NYC-2 Programs in Four Cities (Washington, D.C.: Manpower Research Projects, 1975).

[2]This study is reported in Regis H. Walther and Margaret L. Magnusson, A Study of the Effectiveness of the Graham Associates' Demonstration Project on Education Programming in Manpower Training Projects (Washington, D.C.: Manpower Research Projects, 1975).

made at intake, at termination, and at monthly intervals while they were participating in the program. Achievement tests in reading and mathematics were administered at intake and at intervals of three months.

The NYC Study

The major objective of the Work-Relevant Attitude part of this study was to investigate the predictive validity of the WRAI with respect to the quality of work experience. Efforts were made to locate and interview all the 502 subjects included in the study. If a subject had held a job since terminating from the NYC, efforts were made to obtain a report from his employer on the type, extent, and quality of his work. Based on the available information, a rating was made on a scale of 1 to 4 of how well the subject had adjusted to work.

Subjects whose records indicated that they had not been in the world of work to any appreciable extent (subjects in school, training programs, the Armed Forces and husband-supported housewives without work experience) were eliminated from consideration, as were a few subjects whose records were incomplete or unclear. In all, 372 subjects could be rated and were placed in one of the four following categories:

1. Good work adjustment. Subject currently in full time job which paid at least $2.50 per hour (for males) or $2.00 per hour (for females). Subjects in this category maintained an employed status while in the civilian labor force, and received "adequate" or better performance ratings from their employers.
2. Fair work adjustment. Subject had maintained employed status for a substantial portion of the period of his labor force participation, but there were one or more deficits in his employment. Deficits included current unemployment or current part time employment, substandard rates of pay, and marginal work performance ratings from employers.
3. Minimal work adjustment. Subject had some suc-

cessful experience with work, but most of the measures indicate a poor adjustment to work.

4. Poor work adjustment. Subjects in this category had worked but their job performance had been unsatisfactory, or they had not kept their jobs long enough for their performance to be evaluated and did not have alternate sources of support. This category also included subjects whose first interviews indicated poor work adjustment and who could not be located for their second interviews, as well as subjects who had been in jail most of the time since leaving the NYC.

The WRAI was initially scored by simple addition or subtraction of the items to create a composite score. The decision whether to add or subtract was made on the basis of the direction in which the items discriminated between the criterion groups in the earlier study. The first step in the analysis was to compare the good adjustment group (category 1) with the poor adjustment group (category 4). WRAI scores were found to be significantly correlated with outcomes at all three administrations. Table 1 reports the results for the administration at time of enrollment. Forty-seven percent of the "good" group were in the upper range of scores compared with 20 percent of the "poor" group. The scores were more predictive for females than for males.

Table 1 Work-Relevant Attitude Inventory Scores at Time of Enrollment and Outcomes by Sex

WRAI scores	Males		Females		Total	
	Good N=29	Poor N=84	Good N=20	Poor N=124	Good N=49	Poor N=208
High	38%	15%	60%	23%	47%	20%
Medium	35	49	40	54	37	52
Low	27	36	0	23	16	28
Total	100%	100%	100%	100%	100%	100%

The association of WRAI scores and outcomes evident in the analysis of the intake data increased in the second and third administration (see Table 2).

Table 2 Work-Relevant Attitudes at Times of 1st and 2nd Follow-up Interview and Outcomes by Sex

WRAI scores	Males		Females		Total	
	Good	Poor	Good	Poor	Good	Poor
1st follow-up interview	N=26	N=51	N=18	N=78	N=42	N=129
High	46%	14%	83%	13%	61%	13%
Medium	46	47	11	53	32	50
Low	8	39	6	34	7	37
Total	100%	100%	100%	100%	100%	100%
2nd follow-up interview	N=27	N=55	N=15	N=95	N=42	N=150
High	48%	26%	53%	13%	50%	17%
Medium	41	35	33	30	38	32
Low	11	40	13	57	12	51
Total	100%	101%	99%	100%	100%	100%

The WRAI was designed both as a potential diagnostic instrument for use with individuals and as a possible measure of program effectiveness. In the NYC study, the second administration of the WRAI occurred when most subjects had been out of the NYC for several months. Comparisons of second administration results with those of the initial administration indicated that significant positive attitudinal change occurred in the "good" group; while, in the "poor" group negative attitudinal change occurred (see Table 3). Comparisons of second and third administrations of the Work-Relevant Attitude Inventory showed no significant attitudinal change. It should be noted that most of the time between

Table 3 Average Change in Work-Relevant Attitudes Score between Time 1 (Intake) and Time 2 (first follow-up interview) by Outcomes and Sex

	Males		Females		Total	
	Good	Poor	Good	Poor	Good	Poor
	N=25	N=50	N=18	N=77	N=43	N=127
Mean change score	2.72	-.40	1.83	-1.33	2.35	-.96
Standard deviation	5.65	7.86	7.41	5.45	6.38	6.49

the first and second administration was spent participating in the NYC program.

The analysis up to this point has been based on a comparison of category 1 (the "good" group) and category 4 (the "poor" group). When the analysis was extended to all four categories of work quality it was found that the WRAI predicted better for females than for males and that the correlations were higher for the second and third administrations than for the first (see Table 4). All but one of the correlations were statistically significant. The highest correlation was .44 for the 148 females who took the WRAI during the second administration.

Table 4 Correlation Between the WRAI and Outcomes At Times of Administration by Sex

Time of Administration	Males N	Males R	Females N	Females R	Total N	Total R
First	164	.12	204	.26	368	.18
Second	117	.31	148	.44	265	.38
Third	134	.18	174	.36	308	.28

The apparently greater predictive power of the WRAI for the quality of work adjustment of female subjects could be explained by differences in the kinds of work available to male and female subjects. A review of the job experiences of male subjects indicated that they could get casual "secondary labor market jobs" that paid $2.50, or more, an hour much more easily than could females. Casual work for females, such as baby sitting or other domestic services, usually paid much less and might be unacceptable to the young women included in the study group. Therefore, it took greater effort for females to obtain good jobs and any success was an indication of favorable attitudes toward work. For the male subject the effective factor in job adjustment might be job tenure.

The sex-associated differences in WRAI predictive power resembled differences apparent in some of the de-

velopmental work with the WRAI (see p.2), in which the WRAI was a better predictor of training program performance for females, than for male trainees. The absence of any statistically significant relationship for males in the developmental study may have been due to small sample size.

Conclusions, NYC Study

The NYC study demonstrated that there was a significant association between WRAI scores and employment outcomes and that on the basis of WRAI scores relatively few mistakes would be made in predicting a subject would fall into the high group when he belonged in the low or vice-versa.

It was also found that the WRAI scores of subjects making a "good" employment adjustment changed in a positive direction while they were in the program; while the scores of subjects making a "poor" adjustment tended to change in a negative direction.

The NEP-2 Study

The criterion measures in the New Education Program (NEP-2) demonstration project study involved interest and performance in an education program. These measures were:

1. Rating of the student's interest in the program at the time he entered the class;
2. The student's score on entry achievement tests; and
3. The teacher's rating at time the student terminated how useful the program experience was to the student.

Although NEP-2 study data did not include employment outcomes and could not, therefore, provide criterion measures of work adjustment; the NEP-2 criterion measures were useful in evaluating the validity of the WRAI. Evaluation results for these measures are reported below.

Entry interest rating

WRAI scores were very significantly associated with entry interest ratings (see Table 5). The possibility of a serious "halo effect" should be considered because the interest rating was made immediately after the Work-

Relevant Attitude questions were asked. The interviewer could not, however, immediately interpret the meaning of the responses because he had no norms to compare them to.

Table 5 Students' Interest in NEP-2 and WRAI Scores at Time of Entry by Sex.

	Males			Females			Total		
	N	Mean	S.D.	N	Mean	S.D.	N	Mean	S.D.
Interest									
High	99	15.12	3.47	91	16.60	3.32	190	15.83	3.39
Medium	150	12.79	3.27	40	14.58	3.62	190	13.17	3.42
Low	8	11.12	4.21	32	13.76	3.29	110	12.90	3.92
Correlation of interest and WRAI (R)		.34			.41			.40	

Entry Achievement Tests

Students entering NEP-2 were tested with wide-range screening tests in reading (RJS1) and in math (MJS1), both of which were developed by the Job Corps. Entering students were then tested with the appropriate level of the Stanford Achievement Test (SAT) in reading (paragraph meaning) and in math (arithmetic computations).

Table 6 lists the correlation between the WRAI items and the Paragraph Meaning subtest of the SAT. The last four items were eliminated and a composite score created from the other eight items. A highly significant correlation was found for both males and females between the composite score and all the achievement tests. One can only speculate about the reasons for the correlation. It may be that academically able people develop better attitudes because their success with reading and mathematics gives them more confidence in themselves. Another possibility is that students with better attitudes try harder and therefore learn more. Or it may be that students who answer attitude questions in a more socially acceptable manner make more of an effort on tests and thus get higher scores. In any event, these results provide validity evidence for the WRAI since its scores were found to correlate with an objective measure

of performance. The relatively low values of the correlations do not detract from the conclusion since many factors independent of attitude almost certainly influence achievement scores.

Table 6 Correlation Between WRAI Items and Scores on the Paragraph Meaning Subtest of the SAT by Sex

		Males	Females	Total
13	Most bosses have it in for you	-.28	-.36	-.34
6	Success is a matter of luck	-.27	-.36	-.30
8	The wise person lives for today	-.25	-.23	-.25
3	You feel you have little influence	-.22	-.22	-.23
11	Most people cannot be trusted	-.17	-.30	-.23
22	You get even with people who wrong you	-.11	-.22	-.19
15	You are generally enthusiastic about new plans	.05	.27	.15
17	You feel happy	.06	.17	.13
23	Your chances of being respected and law abiding are good	.05	.11	.11
21	During your spare time, you have things to do that you like doing	.12	.02	.08
12	A high school education is worth the effort	-.07	-.09	-.07
20	You expect to do well in the things you try to do	.07	.04	.05

Usefulness rating

The teachers made an evaluation at the time the student terminated from the program as to its usefulness to the student. A small but significant correlation was found indicating that students with high WRAI scores, on the average, were considered to have gained more from the program than students with low scores (see Table 8).

Table 7 Correlations between Achievement Tests and WRAI Scores

Tests	Males N=316	Females N=143	Total N=459
RJS1	.31	.46	.38
MJS1	.25	.31	.31
SAT Reading test	.37	.50	.46
SAT Math test	.28	.36	.33

Table 8 Rating of Usefulness of NEP-2 to the Student and WRAI Scores

Usefulness Rating	Males N	Males Mean	Males S.D.	Females N	Females Mean	Females S.D.	Total N	Total Mean	Total S.D.
Very useful	128	14.18	3.47	128	16.03	3.44	256	15.11	3.57
Somewhat useful	166	13.21	3.71	39	14.30	3.19	205	13.42	3.64
A waste of time	35	12.07	4.65	16	13.89	3.91	51	12.64	4.48

Conclusions, NEP-2 study

The NEP-2 study demonstrated that the WRAI scores correlated significantly with a rating of student interest at time of entering NEP-2, with reading and math achievement test scores, at that time, and with the teacher's rating of the usefulness of the NEP-2 to the student.

Factor Analysis of the WRAI Items

In previous studies the WRAI was found to have three interpretable factors which were named, Optimism, Self-confidence, and Unsocialized attitudes. A factor analysis was conducted on the NYC Ist interview (Time 2) data, because the scores for this administration correlated best with the work adjustment criterion. The results of factor analysis were similar to those of the earlier study although the loadings of the items were not as

high, reflecting, perhaps, more unreliability because the data had been collected by a number of interviewers in four cities. St. Louis was eliminated because of improper administration. The following results were based on the responses of 311 subjects:

Factor I
Unsocialized Attitudes

Item		Loading
13	Most bosses have it in for you	.55
14	Most work is dull and boring	.50
11	People cannot be trusted	.46
10	It is hard to get ahead without breaking the law	.46
6	Success is a matter of luck; hard work doesn't help	.46
18	Teachers have had it in for you	.39
8	A wise person lives for today	.36
4	You do things you regret	.36
22	You get even with people who wrong you	.32

Factor II
Optimism

17	You feel happy	.54
5	You don't get much fun out of life	-.44
21	During your spare time you have something to do you like doing	.41
25	You feel you have been lucky	.38
24	Your chances for a happy home life are good	.33
2	You believe most people want to help you	.30
26	You have a great many enemies	-.25

Factor III

19	You feel like a failure	-.44
7	You feel as capable and smart as most people	.38
23	Your chances of being respected and law abiding are good	.31
1	If you try hard you can succeed	.30

It should be noted that the item "You have a great many enemies" loaded positively on the Unsocialized Attitudes factor and negatively on Optimism. This result was consistent with the underlying concept of both scales.

Reliability of the WRAI

Since the WRAI was administered three times, it was possible to estimate its test-retest reliability. The correlation will, of course, be an underestimation because of the long time between administrations and the evidence that subjects changed differentially while they participated in the NYC program. The test-retest correlations were reasonably high for the Total Score and substantially lower for the individual scales (see Table 9).

Table 9 Test Retest Scores for the WRAI Scales and Total Score for Three Administrations

	Optimism	Self Confidence	Unsocialized Attitudes	Total Score
Time 1 v. Time 2				
Male	.40	.31	.53	.57
Female	.47	.38	.65	.67
Total	.43	.34	.60	.62
Time 2 v. Time 3				
Male	.26	.25	.54	.54
Female	.37	.36	.67	.67
Total	.35	.34	.62	.63
Time 1 v. Time 3				
Male	.26	.27	.36	.40
Female	.30	.24	.46	.48
Total	.30	.26	.41	.44

The best estimate of the overall reliability is Time 1 v. Time 2 which is .62 and Time 2 v. Time 3 which is .63. The Unsocialized Attitudes scale has almost the same reliability despite the smaller number of items, while the Optimism and Self-confidence scales have significantly lower reliability. The females showed higher reliability correlations than the males, which probably indicates that they were more conscientious about responding to the questions.

Effectiveness of items

There was a wide range in the effectiveness of the 26 items used in the two studies. Some items were generally useful, others were useful for some purposes but not for others and a few items did not correlate with any of the criterion measures.

The following five items proved to be the most effective:

- Most bosses have it in for you and give you a hard time
- Most people cannot be trusted
- You feel that you are a failure
- Teachers have had it in for you and have given you a hard time
- You feel that you have little influence over the things that happen to you

In contrast, the following four items did not correlate with any criterion measure:

- A high school education is worth all the time and effort it requires
- If you try hard enough, you have a chance of succeeding in whatever you want to do
- You expect to do well in the things you try to do
- What are your chances of having a happy home life in the future?

The poor items had smaller standard deviations and the responses were more skewed than were the good items. It seems probable, therefore, that these items tended to elicit stereotyped responses rather than individual expressions of the subject's view of himself or of the world. The good items, on the other hand, apparently reflected interpersonal relationships and the individual's feeling about his own success and impact on the world around him.

Revision of the WRAI

It was clear from the item analysis that all of the 26 items of the WRAI were not needed either to maintain a correlation with criterion measures or to maintain reliability. A reduction of items to 16 created a shorter inventory without losing any of the inventory's effective-

ness.

The items included in the new inventory, the correlations of the items with the total scale score, and the direction of the scoring are listed below:

Optimism	Direction
1. You don't get much fun out of life (.72) 1. strongly agree 2. somewhat agree 3. somewhat disagree 4. strongly disagree	plus
2. You feel happy (-.63) 1. almost always 2. usually 3. sometimes 4. almost never	minus
3. In your spare time, you have something to do that you like to do (-.62) 1. almost always 2. usually 3. sometimes 4. almost never	minus
4. How many enemies do you feel you have? (.54) 1. a great many 2. some 3. a few 4. almost none	plus
Self-confidence	
1. You feel like a failure (.56) 1. almost always 2. usually 3. sometimes 4. almost never	plus
2. You feel as capable and smart as most people (-.62) 1. strongly agree 2. somewhat agree 3. somewhat disagree 4. strongly disagree	minus
3. You feel you have little influence over the things that happen to you (.62) 1. strongly agree 2. somewhat agree 3. somewhat disagree 4. strongly disagree	plus

4. Your chances of becoming a respected and law abiding member of your community are: (-.53) — minus
   1. excellent
   2. reasonably good
   3. not very good
   4. very unlikely

Unsocialized Attitudes

1. Becoming a success is mainly a matter of luck; hard work doesn't help very much (-.56) — minus
   1. strongly agree
   2. somewhat agree
   3. somewhat disagree
   4. strongly disagree

2. The wise person lives for today and lets tomorrow take care of itself (-.52) — minus
   1. strongly agree
   2. somewhat agree
   3. somewhat disagree
   4. strongly disagree

3. It is hard to get ahead without breaking the law now and then (-.58) — minus
   1. strongly agree
   2. somewhat agree
   3. somewhat disagree
   4. strongly disagree

4. Most bosses have it in for you and give you a hard time (-.63) — minus
   1. strongly agree
   2. somewhat agree
   3. somewhat disagree
   4. strongly disagree

5. You get even with people who wrong you as soon as you can (-.46) — minus
   1. almost always
   2. usually
   3. sometimes
   4. almost never

6. Most people cannot be trusted (-.53) — minus
   1. strongly agree
   2. somewhat agree
   3. somewhat disagree
   4. strongly disagree

7. Most work is dull and boring (-.60) — minus
   1. strongly agree
   2. somewhat agree
   3. somewhat disagree
   4. strongly disagree

8. Teachers have had it in for you and have given you a hard time (-.53) — minus
   1. almost always
   2. usually
   3. sometimes
   4. almost never

Conclusions and Interpretation

The WRAI proved in the reported studies to be an instrument with considerable promise both for program evaluation and for diagnosis of individuals. The data collection in the NYC study, which provides most of the reliability and validity data, could not be tightly controlled because of the wide range of circumstances and places in which the WRAI was administered. Nevertheless, the test-retest correlations were in the .60's with the two administrations a year or more apart. If the time between testing had veen shorter and if the administration had been more tightly controlled, the correlations could be expected to be substantially higher.

The following guidelines are suggested for using the WRAI:

a. As a program evaluation tool - Since the WRAI scores have been shown to be associated with employment outcomes, and since trainees with "good" outcomes change in a positive direction and trainees with a "poor" outcome change in a negative direction, change in WRAI scores during program participation provides evidence of program achievement. To be used for this purpose the WRAI would need to be administered at the beginning and the end of the training program.

b. As a tool for individual diagnosis - The scales of the WRAI can provide useful information about the initial attitudes of program participants and can be useful in the counseling process. If used in this way, however, the WRAI should not be used by itself, but only to supplement infor-

mation received from other sources. The Unsocialized Attitudes scale is the most dependable scale at the present time. The support for the Optimism and Self-confidence scales is more limited. The revised WRAI can be scored by combining the items for each scale listed on pages 16-18 through addition and subtraction and computing a total score by adding together the scores for Optimism and Self-confidence and subtracting Unsocialized Attitudes. Standard scores can be computed by reference to Appendix E, which lists the means and standard deviations of the out-of-school NYC sample.

APPENDIX A

THE WORK-RELEVANT ATTITUDES INVENTORY (WRAI)

Responses to the following items are coded on a 4-point scale (1=strongly agree, 2=somewhat agree, 3=somewhat disagree, 4=strongly disagree).

1. If you try hard enough, you have a good chance of succeeding in whatever you want to do.

2. You believe that most people want to help you.

3. You feel that you have little influence over the things that happen to you.[1,2]

4. You seem to do things you regret more often than most people.

5. You don't get much fun out of life.

6. Becoming a success is mainly a matter of luck; hard work doesn't help very much.[1,2]

7. You feel that you are as capable and smart as most people.

8. The wise person lives for today and lets tomorrow take care of itself.[1,2]

9. You would describe yourself as self-confident.

10. It is hard to get ahead without breaking the law now and then.[1]

11. Most people cannot be trusted.[1,2]

12. A high school education is worth all the time and effort it requires.[2]

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1. Item used in the second follow-up interview, NYC-2.
2. Item used in "NEP-2," A Study of the Effectiveness of the Graham Associates' Demonstration Project on Education Programming in Manpower Training Projects.

13. Most bosses have it in for you and give you a hard time.[1,2]

14. Most work is dull and boring.

15. You are generally enthusiastic about new plans.[1,2]

16. You believe most people look out for themselves.

Answers to the following questions are coded on a 4-point scale (1=almost always, 2=usually, 3=sometimes, 4=almost never).

17. You feel happy.[1,2]

18. Teachers have had it in for you and have given you a hard time.[1]

19. You feel that you are a failure.[1]

20. You expect to do well in the things you try to do.[2]

21. During your spare time, you have something to do that you like doing.[1,2]

22. You get even with people who wrong you as soon as you can.[1,2]

23. Would you say that your chances of becoming a respected and law-abiding member of your community are: excellent, reasonably good, not very good, or very unlikely? (1=excellent, 4=very unlikely)[1,2]

24. Would you say your chances of having a happy home life in the future are: excellent, reasonably good, not very good, very unlikely? (1=excellent, 4=very unlikely)

25. How lucky to you feel you have been in your life so far: very lucky, somewhat lucky, somewhat unlucky, unlucky? (1=very lucky, 4=unlucky)

26. How many enemies do you feel you have: a great many, some, a few, almost none? (1=a great many, 4=almost none)

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1. Item used in the second follow-up interview, NYC-2.
2. Item used in "NEP-2," A Study of the Effectiveness of the Graham Associates' Demonstration Project on Education Programming in Manpower Training Projects.

Appendix B Comparison[1] of WRAI Item Responses in "Good" and "Poor" Work Adjustment Groups in Three Administrations by Sex (NYC-2)

(t-test values)

	Time 1			Time 2			Time 3		
	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL	MALE	FEMALE	TOTAL
N,Good	N=26	N=19	N=45	N=26	N=18	N=44	N=26	N=18	N=44
N,Poor	N=54	N=83	N=137	N=49	N=79	N=128	N=37	N=68	N=105
WRAI ITEM #									
1	-.90	-1.35	-1.72	-1.37	.02	-1.10			
2	-.43	-1.01	- .85	-1.89	-1.07	-2.12			
3	.39	2.42	1.60	1.07	4.34	3.71	1.86	2.55	3.65
4	1.55	2.19	2.44	.24	3.59	2.47			
5	.43	1.40	1.32	1.28	1.62	2.21			
6	-.70	1.96	.74	.67	1.76	1.41	1.64	2.06	2.85
7	-.82	-1.22	-1.25	-.52	-2.35	-1.52			
8	-.45	.56	- .03	.78	3.36	2.96	.50	4.78	3.58
9	.06	.01	- .18	-.39	- .89	- .84			
10	.84	1.54	1.42	.68	1.58	1.52	2.01	1.50	2.64
11	.87	2.83	2.68	.25	3.44	2.44	2.31	2.51	3.92
12	-.53	-1.68	-1.14	.57	1.34	- .05			
13	-.34	2.14	.78	3.72	3.25	4.40	2.95	3.39	4.53
14	1.01	1.32	1.46	1.39	2.30	1.91			
15	-1.27	- .83	-1.30	-.26	- .87	- .85	-.39	- .78	- .65
16	1.20	.45	- .71	-.26	.41	0			
17	-.56	-2.02	-1.73	-.51	-1.59	-1.50	.15	-3.45	-2.58
18	1.77	2.69	2.78	1.61	3.83	3.21	-1.03	2.18	.42
19	.34	1.69	1.28	2.24	3.17	3.84	2.55	3.53	4.57
20	-.59	-1.22	-1.27	-1.00	-1.41	-1.62			
21	.26	-1.70	- .86	-.18	-3.78	-2.57	-.90	-2.42	-2.45
22	.90	2.01	1.46	1.53	2.66	2.58	1.53	2.44	2.36
23	-.89	-1.08	-1.07	-1.96	-1.52	-2.27	-1.51	-2.70	-3.25
24	-.78	- .31	- .83	-1.38	- .66	-1.46			
25	-1.70	-2.02	-2.87	-1.33	-1.24	-1.78			
26	.45	2.96	2.50	1.82	2.60	3.31			

[1]Mean responses in "good" and "poor" groups compared through t-tests. A t-test value of about 2.00 is significant at the .05 level, 2.65 at the .01 level, and 3.40 at the .001 level. A plus means the "good" group scored higher and minus that the "poor" group scored higher.

APPENDIX C

Comparison of Mean Change in Responses to WRAI Items Between Two Administration Intervals[1] in NYC-2 Study in "Good" and "Poor" Work Outcome Groups by Sex

(t-test values)

Item #	All Subjects				All Males				All Females			
	Time 1vs2		Time 2vs3		Time 1vs2		Time 2vs3		Time 1vs2		Time 2vs3	
	Good	Poor	Good	Poor	Good	Poor	Good	Poor	Good	Poor	Good	Poor
1	-1.14	.13			0	-1.29			-1.84	1.15		
2	-1.31	-5.08			-.21	-3.07			-1.80	-4.04		
3	-2.41	-.21	-1.97	-1.16	-1.83	-1.61	-2.45	-.33	-1.68	.98	.32	-1.24
4	-.92	-.80			0	-1.57			-1.46	.33		
5	-.27	.50			-.84	0			.68	.66		
6	-.24	-.22	.74	3.48	-.42	.32	0	1.79	.24	-.59	1.32	2.98
7	1.83	3.48			1.03	2.22			1.69	2.67		
8	-1.18	2.33	-.34	.93	-.55	.28	.50	.87	-1.37	2.96	-1.95	.55
9	-.63	-2.13			-1.03	-1.91			.18	-1.18		
10	.13	.19	-1.20	1.01	-.61	-.48	-1.04	.89	1.32	.68	-.62	.56
11	.70	.66	-3.14	-1.77	1.19	.67	-4.34	-1.18	-.49	.29	-.21	-1.31
12	-1.12	-.99			-1.03	-.43			-.44	-.94		
13	-2.72	1.81	-1.54	-.41	-2.43	2.33	-1.36	-1.57	-1.29	.39	-.70	.60
14	.42	1.81			.97	2.00			-.90	.72		
15	.65	1.44	-1.23	-1.83	.53	2.05	-.94	-1.60	.37	.13	-.81	-1.00
16	-2.00	-2.37			-2.19	-1.92			-.49	-1.47		
17	.68	.95	.52	-1.17	.78	1.29	.21	0	0	.28	.57	-1.34
18	-.87	-1.25	-.21	-3.93	-.42	-1.16	-.24	-2.59	-.90	-.71	0	-2.95
19	-4.16	-1.80	-1.00	1.16	-3.09	-.68	-1.14	-.22	-2.92	-1.69	0	1.45
20	0	-.85			0	-.65			0	-.55		
21	.96	-1.37	-.44	-.25	.17	-.34	.35	-.54	1.46	-1.47	-1.43	.10
22	-1.31	-.68	.42	0	-.89	-1.14	.23	.61	-1.14	.10	.57	-.42
23	-.23	-1.45	1.78	.49	0	-.29	1.44	.96	-.44	-1.95	1.00	-.16
24	.39	-.71			.27	-.49			.27	-.50		
25	-.81	.08			-1.07	-.67			0	.62		
26	-.63	1.14			-.89	1.11			.32	.52		

[1]Between first and second administration (Time 1 v. Time 2), and between second and third administration (Time 2 v. Time 3). See Appendix B for N's and rough interpretation of t-test values.

APPENDIX D

Means and Standard Deviations WRAI Items, Second Administration, NYC Study (N=311)

Item	Means	S.D.
1	1.17	.44
2	1.87	.73
3	2.68	1.01
4	2.62	1.09
5	3.06	1.10
6	3.22	1.01
7	1.75	.90
8	2.41	1.18
9	1.82	.86
10	2.90	1.14
11	2.19	1.05
12	1.40	.78
13	2.82	1.02
14	2.68	1.02
15	1.49	.66
16	1.74	.91
17	2.00	.91
18	3.11	.85
19	3.31	.72
20	1.57	.70
21	2.09	.95
22	3.14	.99
23	1.93	.68
24	1.78	.68
25	2.04	.80
26	3.04	1.00

APPENDIX E

WRAI Scale and Total Score Means and Standard Deviations for NYC Sample (N=261)

	Means	Standard Deviations
Optimism	2.03	2.53
Self-confidence	2.25	2.02
Unsocialized Attitudes	-22.14	4.64
Total Score	26.42	6.82